



RF Exposure Report

Report No.: SA141203E08A

FCC ID: JNZVR0004

Test Model: V-R0004

Received Date: Dec. 03, 2014

Test Date: Jan. 22, 2015

Issued Date: Jan. 30, 2015

Applicant: LOGITECH FAR EAST LTD.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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Release Control Record

Issue No.	Description	Date Issued
SA141203E08A	Original release.	Jan. 30, 2015



1 Certificate of Conformity

Product: ConferenceCam Connect

Brand: Logitech

Test Model: V-R0004

Sample Status: ENGINEERING SAMPLE

Applicant: LOGITECH FAR EAST LTD.

Test Date: Jan. 22, 2015

Standards: FCC Part 2 (Section 2.1091)

KDB 447498 D03

IEEE C95.1

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Prepared by : _____

Date: _____

Jan. 30, 2015

Midoli Peng / Specialist

Approved by : _____

Date: _____

Jan. 30, 2015

May Chen / Manager

2 RF Exposure

2.1 Limits For Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (minutes)
Limits For General Population / Uncontrolled Exposure				
300-1500	F/1500	30
1500-100,000	1.0	30

F = Frequency in MHz

2.2 MPE Calculation Formula

$$Pd = (Pout * G) / (4 * \pi * r^2)$$

where

Pd = power density in mW/cm²

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = distance between observation point and center of the radiator in cm

2.3 Classification

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user.

So, this device is classified as **Mobile Device**.

3 Antenna Gain

The antennas provided to the EUT, please refer to the following table:

BT					
Brand	Model	Gain (dBi)	Antenna Type	Connector Type	Frequency range (GHz to GHz)
NA	NA	-1.29	PCB printed	NA	2.402 ~ 2.48
WLAN					
Brand	Model	Gain (dBi)	Antenna Type	Connector Type	Frequency range (GHz to GHz)
NA	NA	1.64	PCB printed	NA	2.4 ~ 2.4835
		1.57			5.15 ~ 5.85

4 Calculation Result Of Maximum Conducted Power

For WLAN: 15.247(2.4GHz)

802.11g

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
2412 - 2462	304.789	1.64	20	0.08846	1

802.11n (HT20)

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
2412 - 2462	278.612	1.64	20	0.08086	1

For WLAN: 15.407(5GHz)

802.11a

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
5180 ~ 5240	50.582	1.57	20	0.01445	1
5745 ~ 5825	206.063	1.57	20	0.05885	1

802.11n (HT20)

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
5180 ~ 5240	54.954	1.57	20	0.01569	1
5745 ~ 5825	194.984	1.57	20	0.05568	1

802.11n (HT40)

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
5190 ~ 5230	52.602	1.57	20	0.01502	1
5755 ~ 5795	112.46	1.57	20	0.03212	1

For Bluetooth:
GFSK

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
2402-2480	1.905	-1.29	20	0.00028	1

8DPSK

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
2402-2480	1.279	-1.29	20	0.00019	1

BT-LE (GFSK)

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
2402-2480	2.075	-1.29	20	0.00016	1

Conclusion:

Both of the Bluetooth and WLAN can transmit simultaneously, the formula of calculated the MPE is:

$$CPD_1 / LPD_1 + CPD_2 / LPD_2 + \dots \text{etc.} < 1$$

CPD = Calculation power density

LPD = Limit of power density

Therefore, the worst-case situation is $0.08846 / 1 + 0.00028 / 1 = 0.089$, which is less than "1". This confirmed that the device comply with FCC 1.1310 MPE limit.

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